

MEANS AND METHOD OF REPLACING A HEART VALVE
IN A MINIMALLY INVASIVE MANNER

ABSTRACT

A heart valve can be replaced using minimally invasive methods which include a sutureless sewing cuff that and a fastener delivery tool that holds the cuff against the patient's tissue while delivering fasteners to attach the cuff to the tissue from the inside out. The tool stores a plurality of fasteners and is self-contained whereby a fastener is delivered and placed all from inside a vessel. The fasteners are self-forming whereby they do not need an anvil to be formed. Anchor elements are operated from outside the patient's body to cinch a prosthesis to an anchoring cuff of the valve body. The cuff is releasably mounted on the tool and the tool holds the cuff against tissue and drives the fastener through the cuff and the tissue before folding over the legs of the fastener whereby secure securement between the cuff and the tissue is assured. Fasteners are placed and formed whereby fasteners are located continuously throughout the entire circumference of the cuff. A minimally invasive surgical method is disclosed, and a method and tool are disclosed for repairing abdominal aortic aneurysms in a minimally invasive manner. Fasteners that are permanently deformed during the process of attaching the cuff are disclosed as are fasteners that are not permanently deformed during the attaching process.

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